

IN THE CLAIMS:

1. (Previously Presented) A capsule endoscope apparatus comprising:
an illuminating device for irradiating illuminating light in a body cavity;
a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device, presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition corresponding to a first image acquisition cycle to a second illuminating condition corresponding to a subsequent image acquisition cycle;
an image pick-up device for sequentially picking up images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; and
a radio device which transmits by radio waves image data obtained by the image pick-up device.
2. (Previously Presented) A capsule endoscope apparatus according to Claim 1, wherein the at least two different illuminating conditions are a light-emitting amount or light-emitting time, the capsule endoscope further comprising:
a setting device which sets the light-emitting amount or light-emitting time.
3. (Original) A capsule endoscope apparatus according to Claim 2, wherein the setting device is a storing device which stores information for setting the light-emitting amount or light-emitting time.
4. (Original) A capsule endoscope apparatus according to Claim 1, wherein the illuminating device comprises a white LED.

5. (Original) A capsule endoscope apparatus according to Claim 1, wherein the illuminating device comprises an electroluminescence.

6. (Previously Presented) A capsule endoscope apparatus according to Claim 1, wherein the at least two different illuminating conditions are a light-emitting amount or light-emitting time and a signal gain of the image pick-up device is proportional to the light-emitting amount or light-emitting time.

7. (Previously Presented) A capsule endoscope apparatus comprising:
 an illuminating device for irradiating illuminating light in a body cavity ;
 a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device, presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition corresponding to a first image acquisition cycle to a second illuminating condition corresponding to a subsequent image acquisition cycle;

an image pick-up device for sequentially picking up images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device;

a selecting device which extracts an image with a wide dynamic range from two or more pieces of image data obtained by the image pick-up device; and

a radio device which transmits by radio waves the image data obtained by the selecting device.

8. (Previously Presented) A capsule endoscope apparatus according to Claim 7, wherein a luminance distribution of the image data is used as a comparison standard for extracting the image with a wide dynamic range by the selecting device.

9. (Previously Presented) A capsule endoscope apparatus having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope apparatus comprising:

the illuminating device comprising a switching device which switches one of a light-emitting amount and a light-emitting time;

a selecting device which extracts an image with a wide dynamic range from the two or more pieces of image data obtained by the image pick-up device upon sequentially switching one of the light-emitting amount and light-emitting time; and

a radio device which transmits by radio waves the image data obtained by the selecting device;

wherein a luminance distribution of the image data is used as a comparison standard for extracting the image with a wide dynamic range by the selecting device and the selecting device selects the image data with a widest luminance distribution of the image data.

10. (Previously Presented) A capsule endoscope apparatus according to Claim 7, wherein an amount of data after compressing the image data is used as a comparison standard for extracting the image with a wide dynamic range by the selecting device.

11. (Previously Presented) A capsule endoscope apparatus having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope apparatus comprising:

the illuminating device comprising a switching device which switches one of a light-emitting amount and a light-emitting time;

a selecting device which extracts an image with a wide dynamic range from the two or more pieces of image data obtained by the image pick-up device upon sequentially switching one of the light-emitting amount and light-emitting time; and

a radio device which transmits by radio waves the image data obtained by the selecting device;

wherein an amount of data after compressing the image data is used as a comparison standard for extracting the image with a wide dynamic range by the selecting device and the selecting device selects the image having a largest amount of compressed image data.

12. (Previously Presented) A capsule endoscope apparatus comprising:

an illuminating device for irradiating illuminating light in a body cavity;

a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device, presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition corresponding to a first image acquisition cycle to a second illuminating condition corresponding to a subsequent image acquisition cycle;

an image pick-up device for sequentially picking up images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device;

a radio device which transmits by radio waves the image data obtained by the image pick-up device;

a selecting device which extracts an image with a wide dynamic range from two

or more pieces of transmission image data transmitted by the radio device; and

a recording device which records the transmitted image data selected by the selecting device.

13. (Previously Presented) A capsule endoscope apparatus according to Claim 12, wherein a luminance distribution of the transmitted image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device.

14. (Previously Presented) A capsule endoscope system having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope system comprising:

the illuminating device comprising a switching device which switches one of a light-emitting amount and light-emitting time;

a selecting device which transmits two or more pieces of image data obtained by the image pick-up device by the radio transmitting device upon sequentially switching one of the light-emitting amount and light-emitting time, and extracts the image with a wide dynamic range from the two or more images transmitted by the radio transmitting device; and

a recording device which records the transmitted image data selected by the selecting device;

wherein a luminance distribution of the transmitted image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device and the selecting device selects the transmitted image data with a largest luminance distribution of the transmitted image data.

15. (Previously Presented) A capsule endoscope apparatus according to Claim 12, wherein an amount of data after compressing the transmitted image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device.

16. (Previously Presented) A capsule endoscope system having an illuminating device, an image pick-up device for picking up an image of an illuminated portion, and a radio transmitting device, the capsule endoscope system comprising:

the illuminating device comprising a switching device which switches one of a light-emitting amount and light-emitting time;

a selecting device which transmits two or more pieces of image data obtained by the image pick-up device by the radio transmitting device upon sequentially switching one of the light-emitting amount and light-emitting time, and extracts the image with a wide dynamic range from the two or more images transmitted by the radio transmitting device; and

a recording device which records the transmitted image data selected by the selecting device;

wherein an amount of data after compressing the transmitted image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device and the selecting device selects the image having a largest amount of the compressed and transmitted image data.

17. (Previously Presented) A capsule endoscope apparatus comprising:

an illuminating device for irradiating illuminating light in a body cavity;

a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device, presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first

illuminating condition corresponding to a first image acquisition cycle to a second illuminating condition corresponding to a subsequent image acquisition cycle;

an image pick-up device for sequentially picking up images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device;

a radio device which transmits by radio waves image data obtained by the image pick-up device;

an image processing device which generates one piece of combined image with an enlarged dynamic range from two or more pieces of transmission image data transmitted by the radio device;

a memory device which stores the combined image; and

a display device which displays the combined image.

18. (Previously Presented) A capsule endoscope apparatus comprising:

an illuminating device for irradiating illuminating light in a body cavity;

a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device, presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition corresponding to a first image acquisition cycle to a second illuminating condition corresponding to a subsequent image acquisition cycle;

an image pick-up device for sequentially picking up images of a subject, which is irradiated with illuminating lights under the illuminating conditions which are different according to the switching by the switching device;

an image processing device which generates one piece of combined image with an enlarged dynamic range from two or more pieces of image data obtained by the image pick-up device; and

a radio device which transmits by radio waves the combined image.

19. (Previously Presented) A capsule endoscope apparatus comprising:

an illuminating device using a light emitting element for irradiating illuminating light in a body cavity;

a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device, presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition corresponding to a first image acquisition cycle to a second illuminating condition corresponding to a subsequent image acquisition cycle;

an image pick-up device for sequentially picking up images of a subject, which is irradiated with illuminating lights under the illuminating conditions which are different according to the switching by the switching device; and

a radio device which transmits by radio waves the image data obtained by the image pick-up device.

20. (Previously Presented) A capsule endoscope apparatus according to Claim 19, wherein the light emitting element comprises a plurality of light-emitting elements at different arranging positions, and the switching device selects the light-emitting element which emits light from the plurality of light emitting elements and changes the property of light distribution for the illuminating light.

21. (Previously Presented) A capsule endoscope apparatus according to claim 1, wherein the illuminating conditions which are switched by the switching device are light-emitting amounts for illumination.

22. (Previously Presented) A capsule endoscope apparatus according to claim 1, wherein the illuminating conditions which are switched by the switching device are light-emitting times for illumination.

23. (Currently Amended) A capsule endoscope apparatus according to claim 1, wherein ~~at least one of the at least two different~~ illuminating conditions and the switching order thereof preset by the switching device ~~[[is]]~~ are set to be changeable by a radio signal.

24. (Currently Amended) A capsule endoscope apparatus according to claim 7, wherein ~~at least one of the at least two different~~ illuminating conditions and the switching order thereof preset by the switching device ~~[[is]]~~ are set to be changeable by a radio signal.

25. (Currently Amended) A capsule endoscope apparatus according to claim 12, wherein ~~at least one of the at least two different~~ illuminating conditions and the switching order thereof preset by the switching device ~~[[is]]~~ are set to be changeable by a radio signal.

26. (Currently Amended) A capsule endoscope apparatus according to claim 17, wherein ~~at least one of the at least two different~~ illuminating conditions and the switching order thereof preset by the switching device ~~[[is]]~~ are set to be changeable by a radio signal.

27. (Currently Amended) A capsule endoscope apparatus according to claim 18, wherein ~~at least one of the at least two different~~ illuminating conditions and the switching order thereof preset by the switching device ~~[[is]]~~ are set to be changeable by a radio signal.

28. (Currently Amended) A capsule endoscope apparatus according to claim 19, wherein ~~at least one of the~~ ~~at least~~ two different illuminating conditions and the switching order thereof preset by the switching device ~~[[is]]~~ are set to be changeable by a radio signal.